

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/071364 A1

(51) International Patent Classification⁷: G01D 9/00

(21) International Application Number:
PCT/GB2004/005409

(22) International Filing Date:
22 December 2004 (22.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0401629.1 26 January 2004 (26.01.2004) GB

(71) Applicant (for all designated States except US): **BRITISH
TELECOMMUNICATIONS PUBLIC LIMITED
COMPANY** [GB/GB]; 81 Newgate Street, London,
Greater London EC1A 7AJ (GB).

(72) Inventor; and

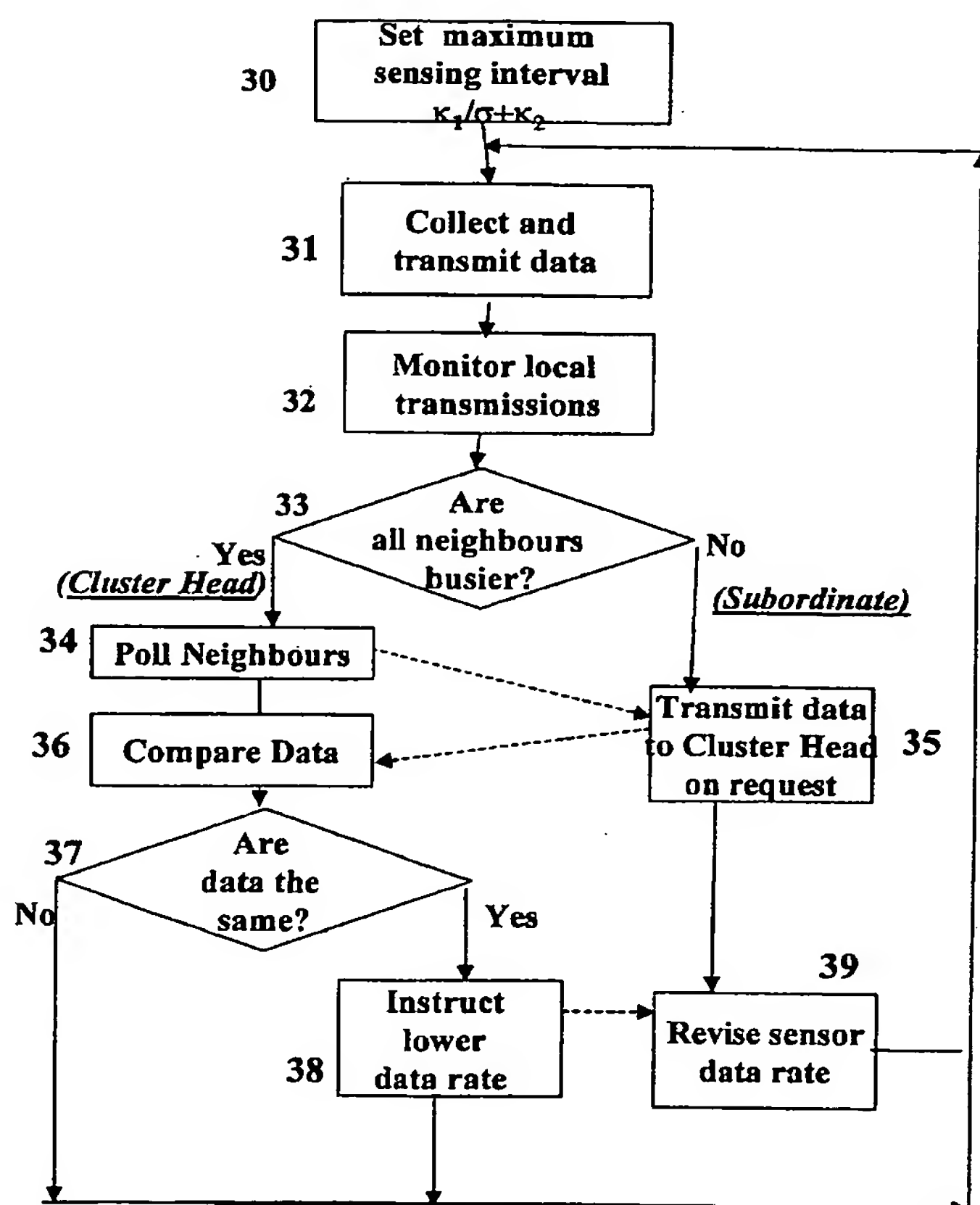
(75) Inventor/Applicant (for US only): **TATESON, Jane,
Elizabeth** [GB/GB]; 145 High Street, Wickham Market,
Woodbridge Suffolk IP13 0RD (GB).

(74) Agent: **LIDBETTER, Timothy, Guy, Edwin**; BT Group
Legal Intellectual Property Department, PPC5A, BT Cen-
tre, 81 Newgate Street, London, Greater London EC1A 7AJ
(GB).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

[Continued on next page]

(54) Title: AD HOC SENSOR NETWORKS



(57) Abstract: A plurality of mobile sensor devices each periodically measure a property of their environment, and determine the rate of change in that property. Neighbouring devices also co-operate to determine the values of the property being measured by each other. If the property is invariant both over time and over a number of neighbouring devices, their periodicity of measurement-taking is reduced to conserve power for more significant measurement events. The devices may co-operate to relay their measurements to a data collection point. Each device determines the level of data traffic being carried by one or more neighbouring devices, identifies the device that is carrying the least traffic, and puts itself under the control of that device. Any device that determines that it is carrying less such traffic than any of its neighbours assumes control of the data sensing rate for itself and those neighbours, and transmits control data to the said other devices to co-ordinate their data collection rates and stagger their data collection times.



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*